

# Modeling Excellence

COLLECTORS EDITION  
15 SELECT MODELS

EXCELLENT  
15 PAPER AIRPLANES  
HISTORY OF JET FIGHTERS SERIES

DESIGNED BY  
DR. Y. NINOMIYA



P-80 SHOOTING STAR

**Assembly Kit**

Dr. Yasuaki Ninomiya was awarded the Grand Prize in both the flight time and distance divisions at the First International Paper Airplane Contest (Pacific Basin Division) in San Francisco in 1967 and served as a judge in the Second Great International Paper Airplane Contest in Seattle in 1985.

# WhiteWings<sup>®</sup>

EXCELLENT PAPER AIRPLANES

## Assembly Kit for 15 Models

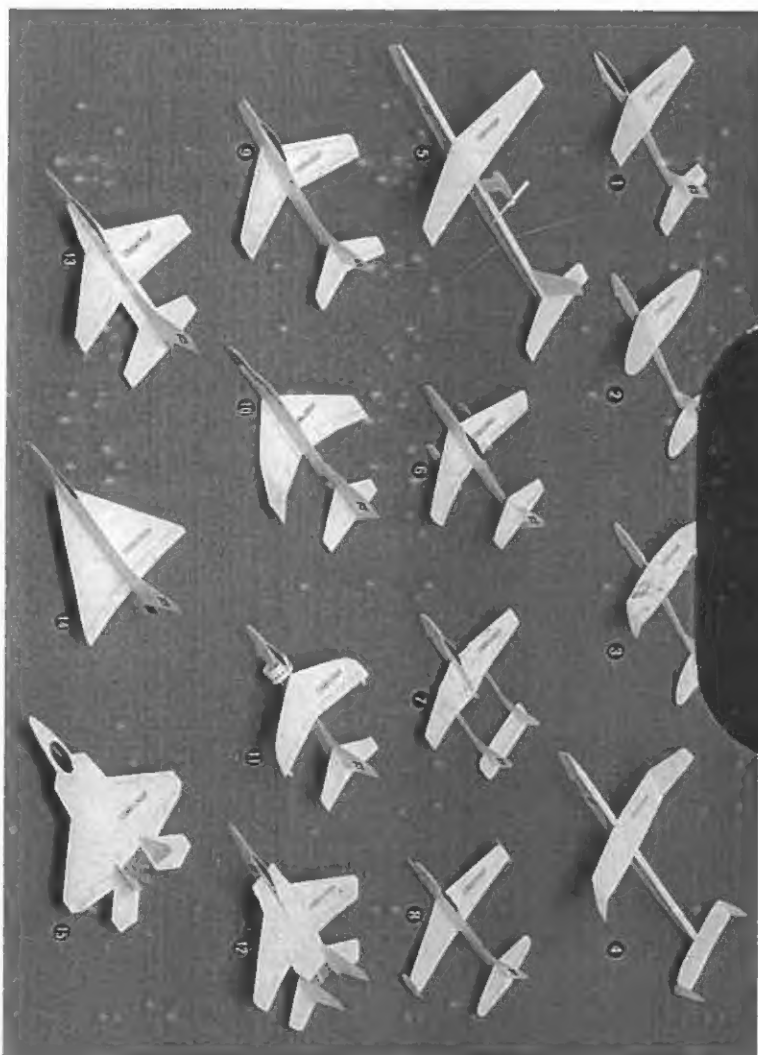
■ Kit includes the following:

- 1 Racer 532 Dragonfly
- 2 Racer 533 Sparrowhawk
- 3 Racer 534 Heron
- 4 Trilinear 704
- 5 Trilinear 705
- 6 Messerschmitt Me-262
- 7 De Havilland VAMPIRE
- 8 Lockheed P-80 SHOOTING STAR
- 9 North American F-86 SABRE
- 10 McDonnell Douglas F-4 PHANTOM II
- 11 Hawker Siddeley HARRIER
- 12 McDonnell Douglas F-15 EAGLE
- 13 General Dynamics F-16 FIGHTING FALCON
- 14 Dassault MIRAGE 2000
- 15 Lockheed F-22

■ Instruction booklet  
(68 pages)  
Assembly, flight,  
and design directions

■ Also Included:  
Rubber band  
Catapult

(GLUE NOT INCLUDED)



### FLYING FUN FOR EVERYONE

When you fly your plane please keep the following in mind.

- \* Launch your plane in a large area away from people who might get hit.
- \* Don't fly your plane where cars will be passing by.



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# Whitewings<sup>®</sup>

ASSEMBLY INSTRUCTIONS

FLIGHT INSTRUCTIONS

GUIDELINE FOR WHITEWINGS COMPETITION

INTRODUCTION TO PAPER PLANE DESIGN

HOW TO BUILD "WHITEWINGS"



**HISTORY OF JET FIGHTERS SERIES**

5. Glue the middle part of the main wing firmly to the fuselage.

4. Assemble the middle part of the wing with (3), (10), (11), (12) and (13) following the assembly instructions 0, 1, ..., 7, on page 64 starting with step 0. The dihedral angle, however, must be 5°. Be careful as the part numbers for the main wing are different from those listed on page 64.

3. Glue the horizontal stabilizer (15) to the fuselage.

1. Fold all tabs outward.

2. Aligning the noses flush, glue (1) through (8) together in the order shown.

to 11 mm and the dihedral angle is 5°

Camber the wing tips carefully

7. Camber both wing tips (9) and (13). Fold tabs on both ends of the main wing to form a 30° dihedral angle using the gauge and then camber them as well.

8.

Apply glue to the top surface of the folded tabs of the main wing. Attach wing tips (9) and (13) respectively. Once again, check that the dihedral angle at the tip of the wing is 30° using the gauge.

Camber the wings carefully.

## FINISHING TOUCHES

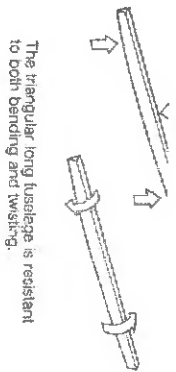
- Give the finishing touches to the plane after it dries thoroughly.
- 9. Camber the main wings carefully with your fingers.
- 10. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 5° and for the wing tips 30°.
- 11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

## TEST FLIGHT

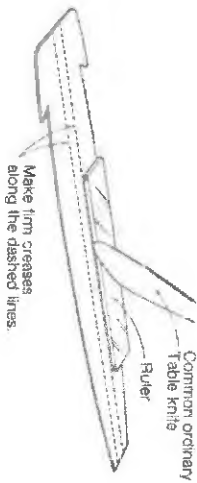
- Test fly the plane according to the Test Flight instructions for Regular Planes on page 11 to 13.

airplanes. That is why I have spent some time researching and designing a fuselage that accommodates the body construction of a large paper airplane.

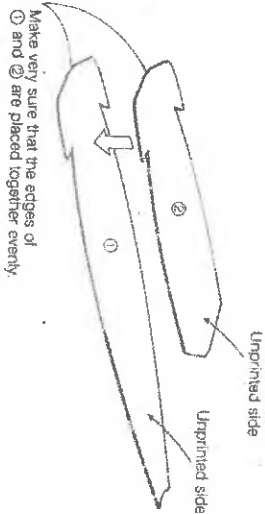
The result of these efforts was the invention of the triangular long fuselage which is resistant to bending and twisting. Its aerodynamic performance makes it worthy of the WhiteWings' name.



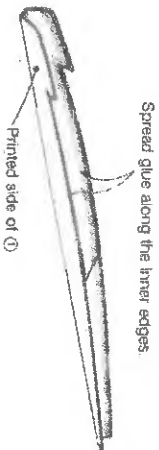
**1.** Make firm creases along the dashed lines of fuselage pieces (1) & (2) using a common ordinary table knife (blunt knife) and a ruler as a guide. Avoid cutting through the dashed lines.



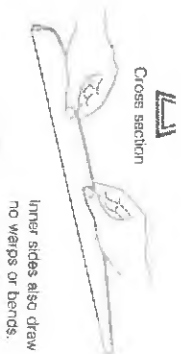
**2.** Spread glue evenly over the entire surface of printed side of (2). Apply (2) to the unprinted side of (1). Make very sure that the edges of (1) and (2) that form the plane nose are placed together evenly, or flush, as shown in the diagram.



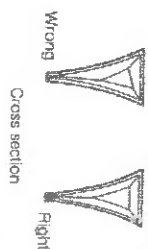
**3.** Before the glue dries, fold (1) and (2) along the creased dashed lines having (2) face inward. Then spread glue along the inner edges as shown.



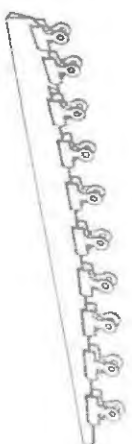
Glue the inner edges together to complete the formation of the cross section as shown.



**5.** View the fuselage closely from both the front and back carefully straighten any warps or bends before the glue dries. Look inside of the fuselage to make sure the inner side also draw no warps or bends.



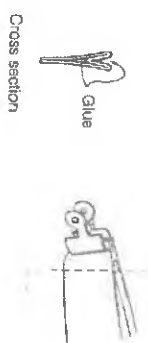
**6.** Let the fuselage dry completely by attaching clips or clothespins on the glued edges as shown. It takes at least 2 hours to dry.



**7.** Make a groove along the thick dashed line at the plane nose by carefully pressing down upon it with a ruler. The groove must be deeper at the tip of the plane nose than at any other part. The remaining area of the top of the fuselage, except for the thick dashed line, should remain flat.



**8.** Put glue into the groove at the tip of the plane nose and both inner sides of the plane nose and glue together. Let it dry thoroughly (at least 2 hours) using a clip to keep the tip of the nose in place.





**7.** Place a ruler along each of the outer lines of the main wing and bend each side up individually to make a dihedral angle of approximately 5° for both sides of the main wing.

**4.** Fold both tabs of the horizontal stabilizer ⑦ as shown.

**3.** Glue ④ to the underside of ③. When dry, cut off the protruding portions.



**2.** Cut the main wing ③ along the solid lines, up to the dashed lines. Place a ruler along the dashed line and bend the resulting strips slightly upward.



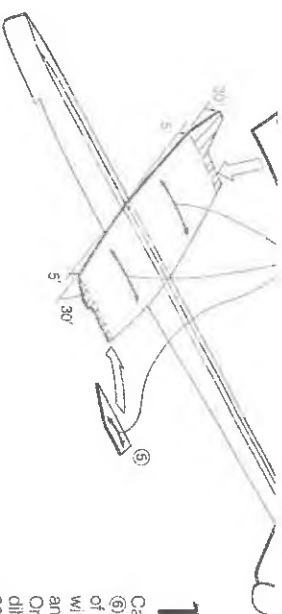
**5.** Glue the vertical stabilizers ② and ③ to the tabs of the horizontal stabilizer ⑦ aligning the arrows on ② and ③ with the folded tab lines of ⑦.

**8.** Glue the main wing ③ + ④ firmly to the gluing position for the main wing on the fuselage. Make sure to align the center line of the main wing with that of the fuselage.



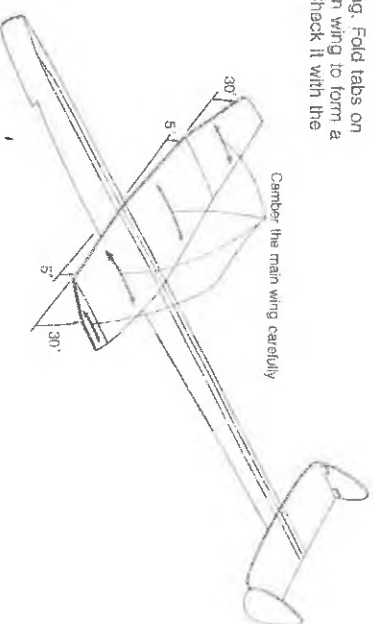
**1.** Assemble the fuselage following the assembly instructions for the triangular fuselage on pages 42 and 43.

**6.** Glue the horizontal stabilizer ⑦ + ③ + ② firmly onto the gluing position for the horizontal stabilizer on the fuselage top. Make sure to align the center line of the fuselage with that of the horizontal stabilizer.



**10.** Camber both wing tips ⑤. ⑤. Apply glue to the top of the folded tabs of the wing and attach the wing and ⑥ respectively as shown. Once again, check that the dihedral angle at the wing 30° using the gauge.

**9.** Camber the main wing. Fold tabs on both ends of the main wing to form a 30° dihedral angle. Check it with the gauge.



## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 11.** Make the camber on the main wing even with your fingers.
- 12.** Using the dihedral angle gauge, make sure the dihedral angle of the main wing is 5° and for the wing tips 30°.
- 13.** View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

## TEST FLIGHT

- Test fly the plane according to the test flight instructions for Regular Planes on pages 11 to 13.

**7.** Place a ruler along the outer lines of the main wing and bend each side up individually to make a dihedral angle of approximately 15° for both sides of the main wing.

**5.** Fold the tab of the vertical stabilizer (5). Glue (7) to the other side of the vertical stabilizer (6).

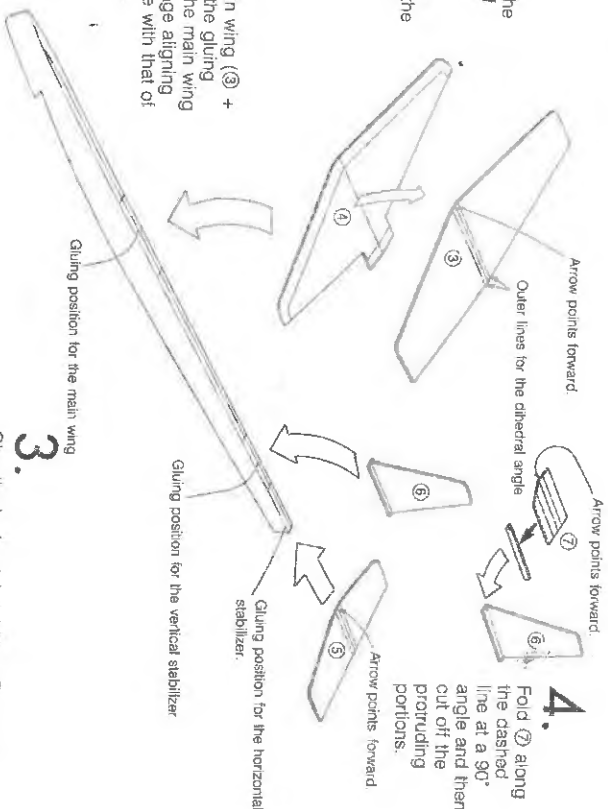
**6.** Glue the vertical stabilizer (6) + (7) to the gluing position for the vertical stabilizer on the fuselage. Make sure to align the folded tab line of the vertical stabilizer with the center line on the fuselage.

**2.** Glue (2) to the underside of (3) aligning their center lines. When dry, cut off the protruding portions.

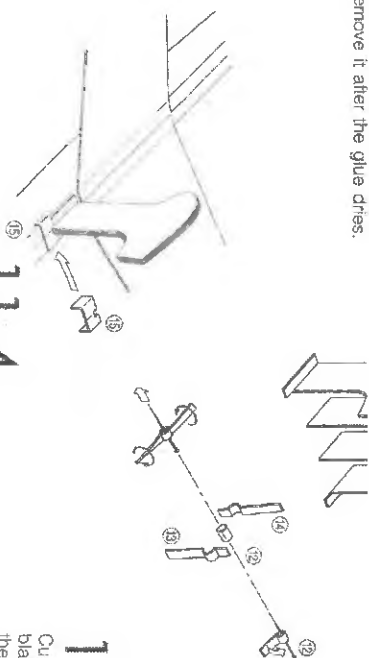
**8.** Glue the main wing (3) + (4) firmly to the gluing position for the main wing on the fuselage aligning its center line with that of the fuselage.

**1.** Assemble the fuselage following the assembly instructions for the triangular fuselage on pages 42 and 43.

**3.** Glue the horizontal stabilizer (5) to the gluing position for the horizontal stabilizer on the fuselage.



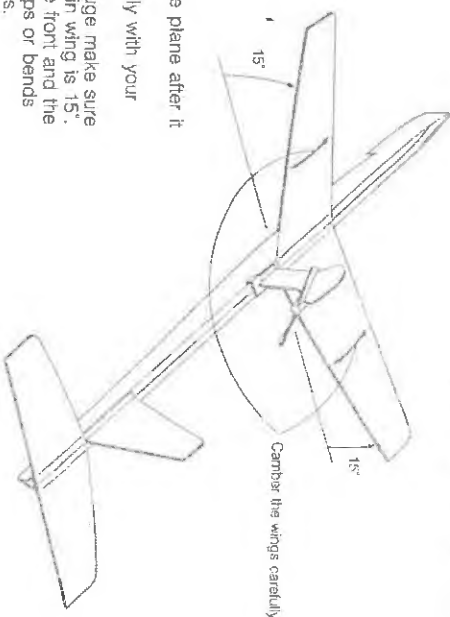
remove it after the glue dries.



**10.** Glue the engine (9) + (10) + (11) to the gluing positions for the engine on the fuselage. Then fold (15) as shown and glue (15) to the fuselage top so that it surrounds the base of the engine as shown.

After inserting the pin with the propeller into the back end of the engine, trim the propeller blades so that both blades are of equal length. Make sure the propeller revolves smoothly.

When dry, carefully twist the propeller blades in opposite directions as shown.



### FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 12. Camber the main wing slightly with your fingers.
- 13. Using the dihedral angle gauge make sure the dihedral angle of the main wing is 15°.
- 14. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

### TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

### 11-2

To make the propeller hub (the part which the propeller shaft passes through), wrap the ribbon (12) around the pin applying glue on the ribbon. After making sure that the hub around the pin revolves smoothly, pull the pin out temporarily.

### 11-3

Curve the end of both propeller blades (13 and 14) to fit around the hub as shown. Wrap the blades around the hub and glue on.

### 11-4

After inserting the pin with the propeller into the back end of the engine, trim the propeller blades so that both blades are of equal length. Make sure the propeller revolves smoothly.

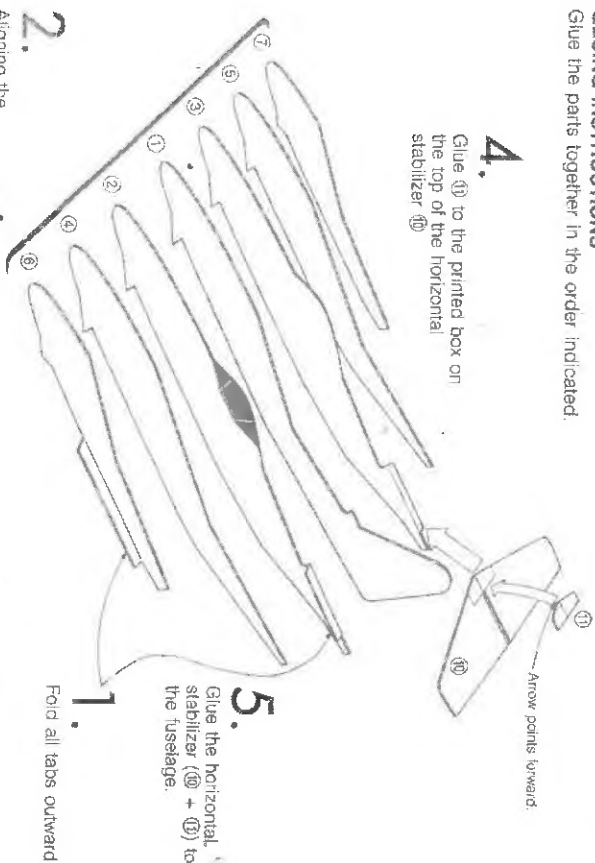
and vertical lines ways in verticality, use study in a sweepback wing with small wing at some speed had been carried forward and put into practical use in the Me-262 prior to any other country.

## GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

4.

Glue (11) to the printed box on the top of the horizontal stabilizer (10).



1. Fold all tabs outward.

6.

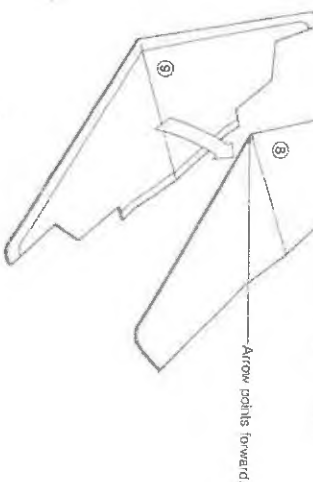
Aligning the noses flush, glue (1) through (7) together in the order shown.

Placing a ruler along the center line of the main wing (8 + 9), make a dihedral angle of approximately 10°. Then, glue the main wing to the fuselage aligning their center lines. (Refer to [NOTE].)



3.

Glue (3) to the underside of (8). When dry, cut off the protruding portions.

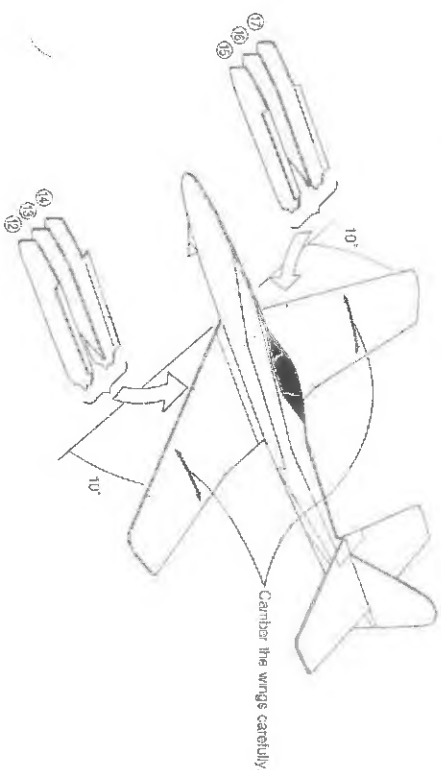


7.

After folding the tabs, glue together (2), (3) and (4) to make the left engine and (5), (6) and (7) for the right engine.

5.

Using the engine installation lines on the upper side of the main wing as a guide, glue the two engines to the underside of the main wing.

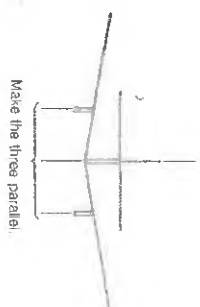


## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- Camber the outer sides of the main wing from the engines carefully with your fingers.
- Place the dihedral angle gauge at the underside of the main wing and make sure the dihedral angle for the main wing is 10°.
- Fix the engines to ensure the vertical fuselage line and the engines are parallel when viewed from the front.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

## TEST FLIGHT

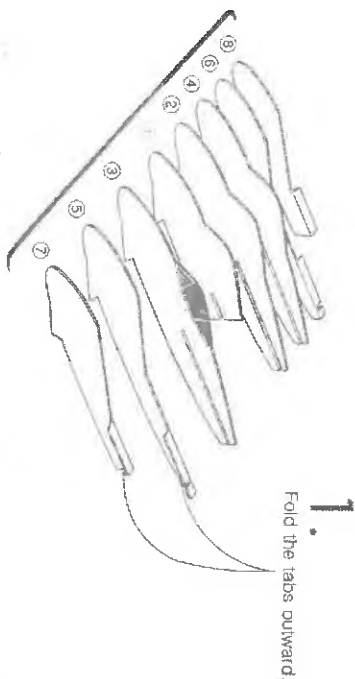
- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.



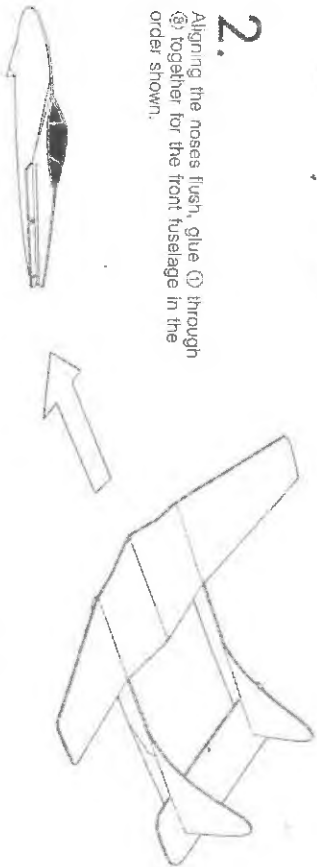


# GLUING INSTRUCTIONS

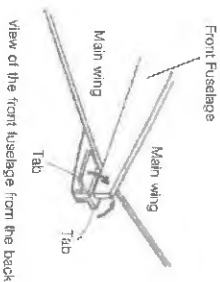
Give the parts together in the order indicated.



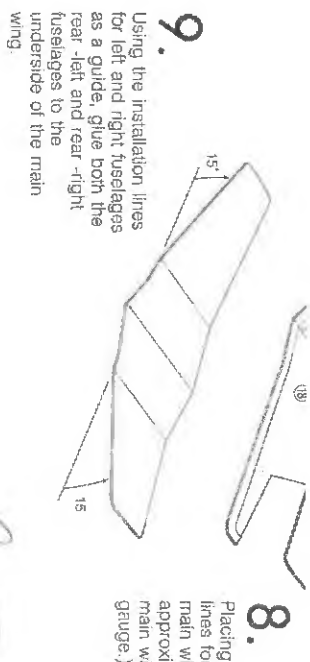
2. Aligning the noses flush, glue ① through ③ together for the front fuselage in the order shown.



12. Referring to the figure, glue the rear tabs of the front fuselage to close the slit.

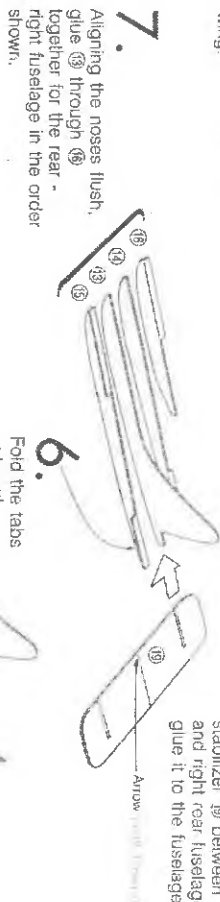


11. Insert the main wing into the end of the slit of the front fuselage. Glue the front tab of the front fuselage to the underside of the main wing to fix them. As the fuselage prevents you from finding the center line of the main wing, install the fuselage using the center guidelines on the main wing.



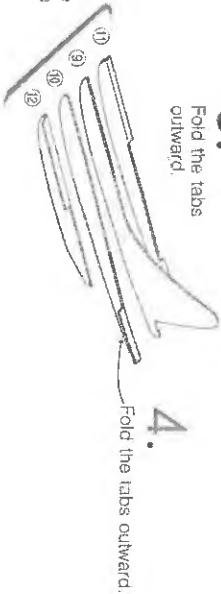
8. Placing a ruler along the installation lines for left and right fuselages on the main wing, make a dihedral angle of approximately 15° for both sides of the main wing. (Use a dihedral angle gauge.)

10. Bridging the horizontal stabilizer ⑩ between left and right rear fuselages, glue it to the fuselages.



6. Fold the tabs outward.

5. Aligning the noses flush, glue ④ through ⑩ together for the rear-left fuselage in the order shown.



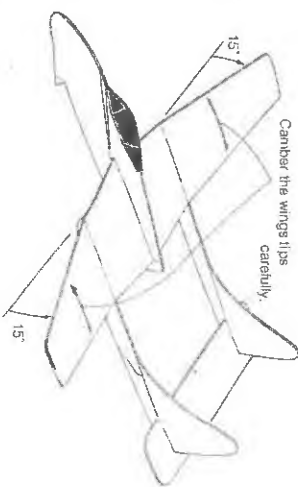
4. Fold the tabs outward.

## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 13. Camber the wing tips carefully with your fingers.
- 14. Using the dihedral angle gauge, make sure the dihedral angle of the outer of the main wing tips are both 15°.
- 15. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

## TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.



a characteristic feature of P-80.  
T-33 Jet Trainer. Plane which is now being used is the two-seat plane based upon P-80.

## GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

7.

Glue the horizontal stabilizer ⑫ to the fuselage.

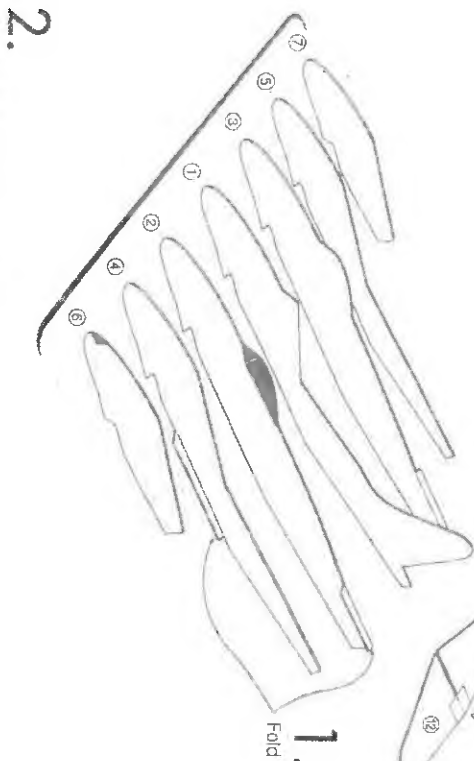
8.

Glue ⑬ to the printed box on the top of the horizontal stabilizer ⑫.

Arrow points forward.

1.

Fold all tabs outward.



2.

Aligning the noses flush, glue ① through ⑦ together in the order shown.

9.

Place a ruler along the center line of the main wing (⑧ + ⑨), make a dihedral angle of approximately 13° for both sides of the main wing. Then, glue the main wing to the fuselage aligning their center lines. (Refer to [NOTE] on page 48.)



4.

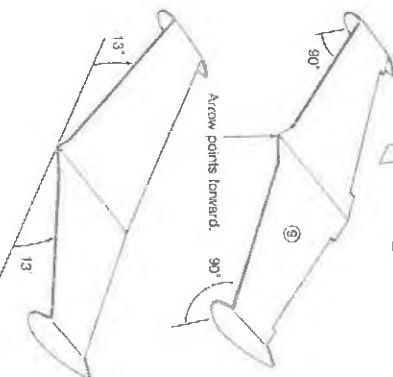
Glue parts ⑩ and ⑪ respectively to the inside of the tip tanks of the main wing ⑧.

5.

Bend the tip tanks of ⑨ (the backing of the main wing) downward 90°. (For this P-80, it is easier not to cut ⑨ out with an extra 2 - 3mm margin along the front and back lines.)

6.

Spread glue entirely on the printed side of ⑨ including the tip tanks. Then, glue ③ to the underside of the main wing ⑧ and let it dry thoroughly.

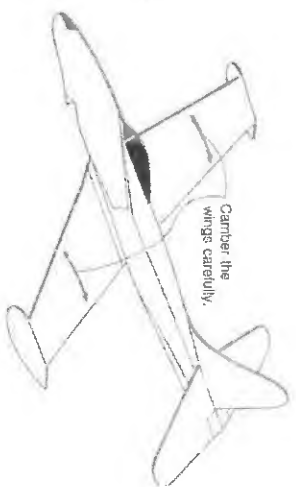


## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 10. Camber the main wing slightly with your fingers.
- 11. Place the dihedral angle gauge at the underside of the main wing and make sure the dihedral angle for the main wing is 13°.
- 12. Make sure the tip tanks are bent at 90° to the main wing.
- 13. View the plane from the front and the back and straighten any warps or bands in the fuselage and the wings.

## TEST FLIGHT

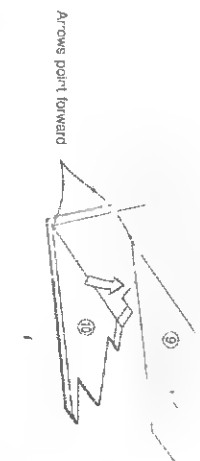
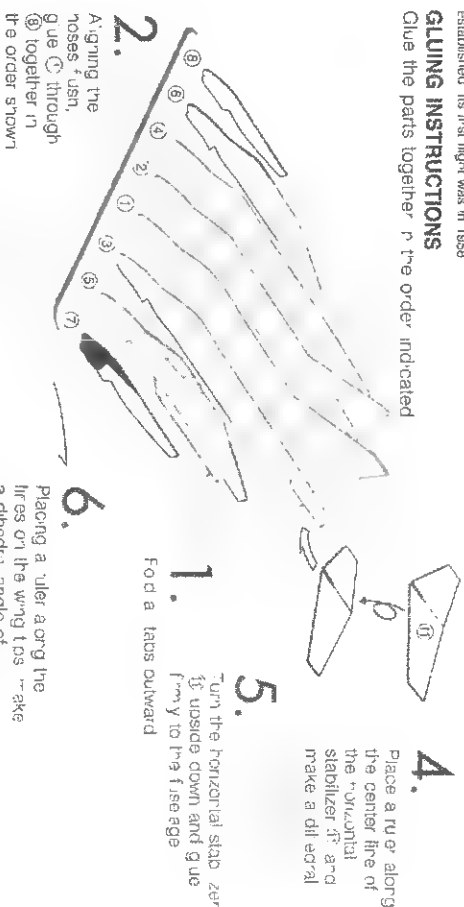
- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.



established its first flight was in 1936

## GLUING INSTRUCTIONS

Glue the parts together in the order indicated



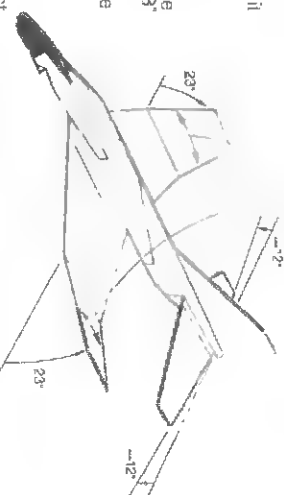
Camber the wing tips carefully

## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly
7. Camber the wing tips carefully with your fingers.
8. Using the dihedral angle gauge make sure the dihedral angle for the wings tips are 23° and for the horizontal stabilizer minus 12°
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings

## TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on page 11 to 13



## GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



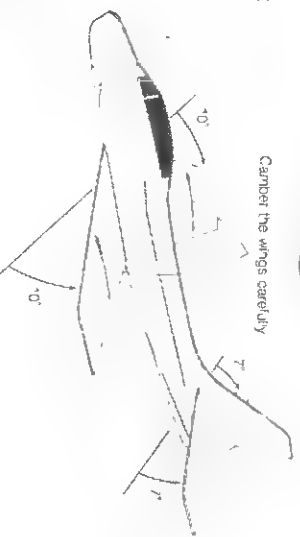
Camber the wings carefully

## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly
7. Camber the main wings carefully with your fingers.
8. Using the dihedral angle gauge, make sure the dihedral angle for the main wings are 10° and for the horizontal stabilizer 7°
9. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings

## TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13

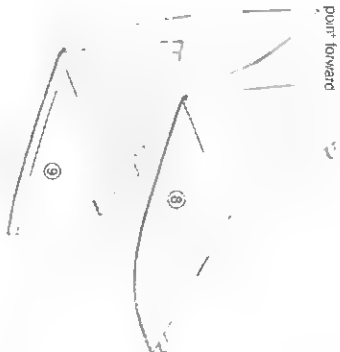


and most successful SAVROL fighter in the world

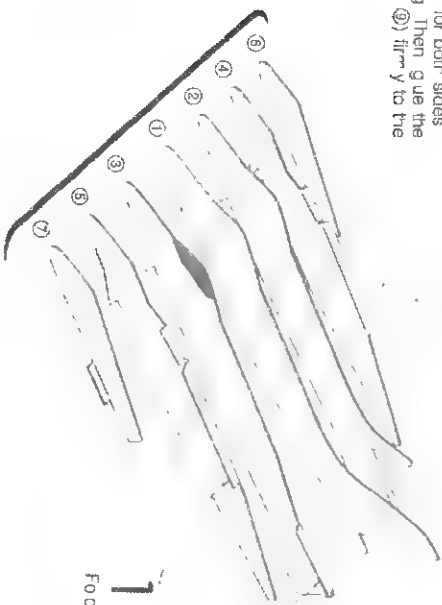
## GLUING INSTRUCTIONS

Glue the parts together in the order indicated

3. Glue (8) to the undersides of (9). When dry, cut off the protruding portions



6. Placing a ruler along the center line of the main wing (8) + (9), bend each side up individually to make a dihedral angle of approximately 5° for both sides of the main wing. Then glue the main wing (8) + (9) firmly to the fuselage.



2. A. gluing the noses flush, glue (1) through (7) together in the order shown.

Arrow points forward



7. Glue (11) to the printed box or the top of the horizontal stabilizer (10).

5. Glue the horizontal stabilizer (10) + (11) to the fuselage.

7. Roll up (12) with your fingers in advance keeping the dried side of (12) facing outward. Then glue (12) to the tab of the lower part of the fuselage a gluing the center line of (12) with the center of the fuselage.

\* Camber the main wing carefully

8. Glue both edges of (12) to each tab of the upper part of the fuselage.



## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 9. Camber the main wings slightly with your fingers.
- 10. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 5°.
- 11. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

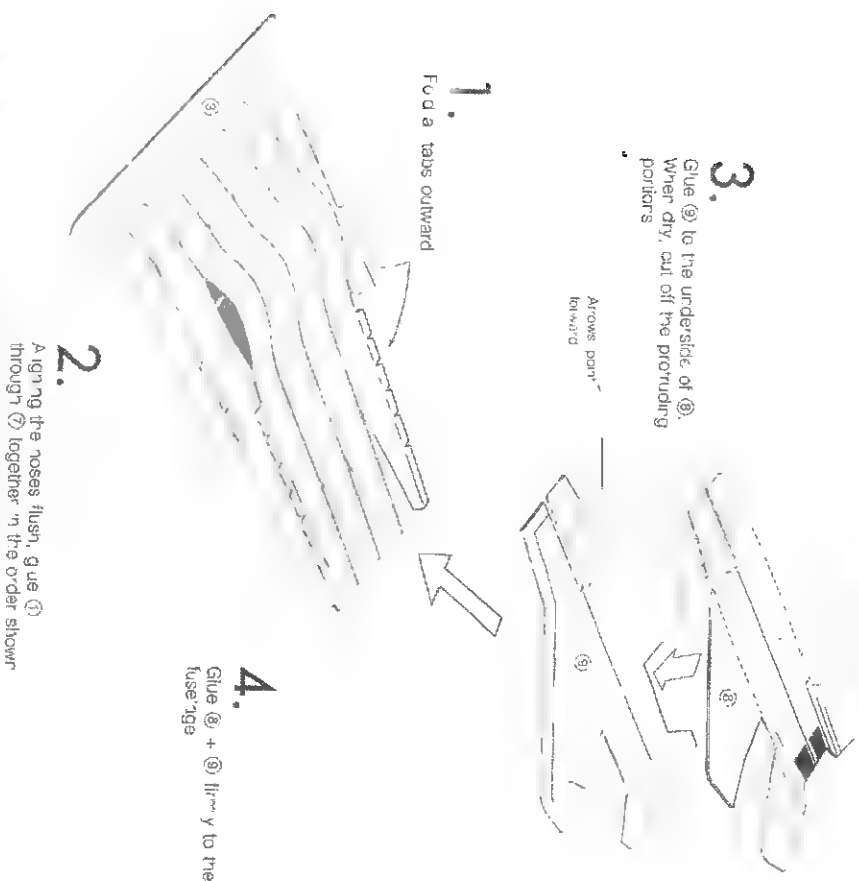
## TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13

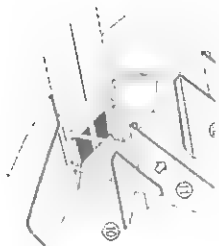
fighters since this development. Its first flight was in 1972.

### GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



6. Next, glue (10) to the side of (1) and (11) to the side of (12).



7. Placing a ruler along the dashed line, bend the main wing slightly upward to make a dihedral angle of approximately 5°.



### FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 8. Camber the main wings carefully with your fingers.
- 9. Using the dihedral angle gauge, make sure the dihedral angle for the main wing are 5° and the vertical stabilizers 90°.
- 10. View the plane from the front and the back and straighten any warps or bends in the fuselage and wings.



### TEST FLIGHT

- Test fly the plane according to Test Flight instructions for Regular Planes on pages 11 to 13.

## GLUING INSTRUCTIONS

## GLUING INSTRUCTIONS

Glue the parts together in the order indicated

- and ④

8. Insert and glue the main wing to the fuselage in the same way as the horizontal stabilizer except in situ, with printed side down. The logo should be visible when the plane is as shown.



- 5.

Glue (12) to the underside of (11) when dry, cut off the protruding portions



- 9

Make 2 holes through the center gu delines so that you can find the center from the underside of the matting

**Center guideline** When the main wing is inserted into the fuselage, find the center part of the wing using these center guidelines

9. Place a ruler along the dashed line of ⑤ and fold it outward. Do the same with ⑥.



- Glue ⑤ and ⑥ respectively to each side of the fuselage

- 11.** Glue ⑦ through ⑩ to the fuselage in the order shown.



## FINISHING TOUCHES

- Give the finish ng touches to the plane after it comes through y.
12. Using a ruler, make the dihedral angle of "0° or the main wing at the end of the flat tab where it is not y used. Make a dihedral angle of minus 2° on the horizontal stabilizer in the same manner. Place the dihedral ang gauge on them to check that the dihedral ang es have been properly made



13. Camber the main wings slightly with your fingers
14. Bend both trailing edges of the horizontal stabilizer upward by

approximately 1 – 2 mm (1/16"). Do not forget to do this, or the plane won't fly!



15. View the plane from both the front and the back and straighten any warps or bends the fuselage and wings.

## TEST FLIGHT

- Test fly the plane according to the Test Flight Instructions for Regular Planes on pages 10-13
- If your plane tends to dive down or if it flies upside down when going upward, the reason might be insufficient bending on the trailing edges of the horizontal stabilizers. Keep bending the part just a "micro" more until you get a straight lift!



Before being realized in war planes, its mass production is expected in the late 1990s.

## GLUING INSTRUCTIONS

Glue the parts together in the order indicated

2.

Align the "noses" flush, glue through ⑤ together in the order shown

4.

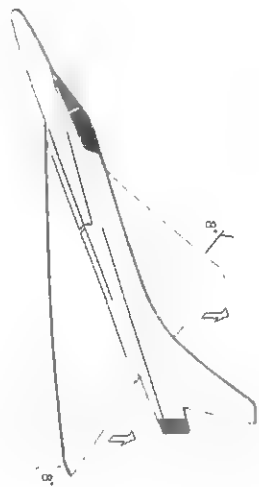
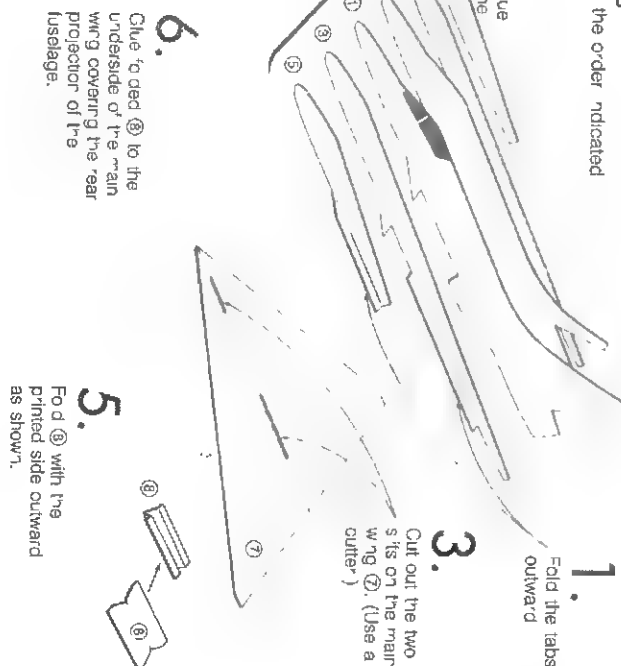
Spread glue on the tabs on the fuselage. Then, glue the fuselage to the main wing ⑦, inserting both the hook for the catapult and the rear projection into the slots in order to glue the main wing accurately, draw the center line on the underside of the main wing and glue the main wing to the fuselage, aligning the center line of the main wing with that of the fuselage. (Refer to [NOTE] on page 48)

## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- Turning up gently the wing from the wing root, make a dihedral angle of approximately 8°.
- Place the dihedral angle gauge at the underside of the wing and check the dihedral angle is 8°.
- Bend both trailing edges of the wing up by approximately 3 mm (1/8"). Don't forget this, or the plane won't fly.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wing.

## TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Delta wing planes on page 13.



before being realized in war planes, its mass production is expected in the late 1990s.

## GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

5.

Alter the cockpit ⑩ dries thoroughly, press its fringe down carefully with your fingers. Refer to the figure of x-x cross section

4.

Fold the "cockpit" ⑩ slightly inward along its center. (Use the short center line as a guide.) Sew the whole of the cockpit into a curve to complete its oval shape. Then, glue the tab as shown.

7.

Fold the tabs of the vertical stabilizer ③ and ④. Then, glue them to their gluing positions on the upper side of the wing ⑦

6.

Spread glue around the bottom edge of the cockpit ⑩. Apply it to the printed oval shape on the upper side of the wing ⑦. Press it down with your fingers for a few minutes until it dries

2.

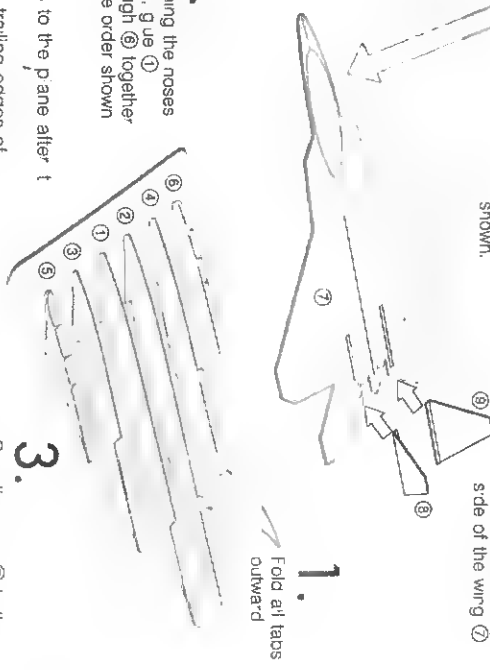
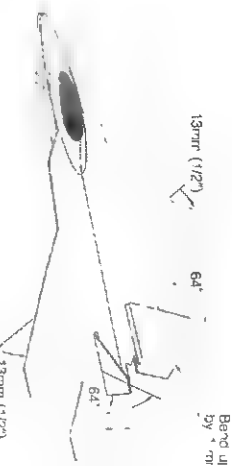
Aligning the noses flush, glue ① through ⑥ together in the order shown

## FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- Bend the right and left trailing edges of the main wing slightly upward 13 mm (1/2"). Refer to the figure
- Bend both trailing edges of the horizontal stabilizers upward by 1 mm (1/32"). Refer to the figure.
- Tilt the two vertical stabilizers respectively outward (64°). Put the gauge between the vertical stabilizers to make sure of the angles.
- View the plane from both the front and the back and straighten any warps or bends in the fuselage and the main wing.

## TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.



Because the shape of the central part of the wing resembles a so called saddle shaped surface in math, call this type of wing a MOST (Modified Saddle Type) wing. It is constructed as follows

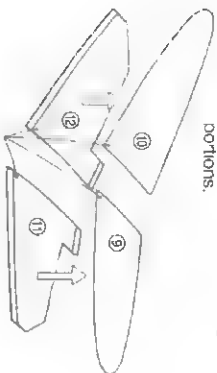
#### CAUTION 1

The parts numbers used below are for the Racer 533. As the part numbers and dihedral angle may change according to the model, be careful when you use these instructions for other models

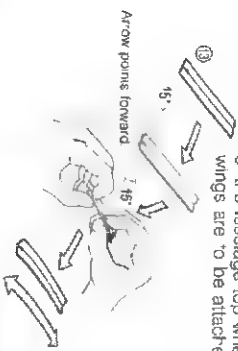
#### CAUTION 2

When constructing the Racer 534, start with step 0.

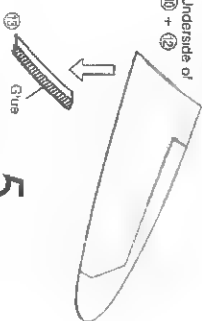
**1.** Glue parts ⑩ and ⑪ to the undersides of parts ⑨ and ⑫ respectively. When dry cut off the protruding portions.



**2.** Using a ruler along the center line, fold part ⑩ from the center line to make a 45° angle on both sides. Then curve it carefully with your fingers to fit the curved edge of the fuselage top where the main wings are to be attached



**4.** Apply glue or half of the underside of ⑬ and glue onto ⑩ + ⑫ (The arrow should point toward the dot.)



**5.** In the same manner as in 4, attach ⑭ + ⑮ to the other side of ⑬

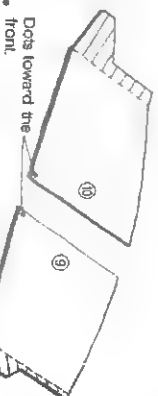


**6.** Placing the dihedral angle gauge on the main wing check that the dihedral angle is 15°.

**7.** Putting folded stands under the main wing will be conducive to fast and thorough drying.



Folded paper stands



**0.** Cut parts ③ and ④ along the solid lines up to the dashed lines. Then placing a ruler along the dashed line bend the resulting strips slightly upward.

Not toward the front

**MEETINGS & EVENTS**

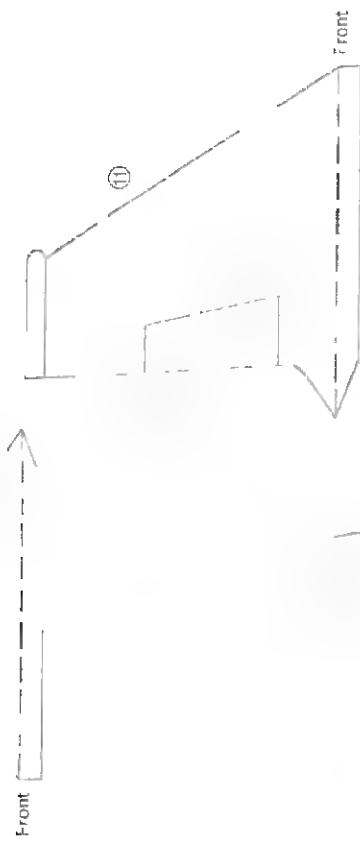
**Dr. Yasuaki Ninomiya**, born in 1926, has been fascinated by airplanes since early childhood, an interest which later developed into his present hobby and business of designing and building paper airplanes.

He received his doctorate in 1962 in the field of microwave measurement theory. He is recognized as a pioneer in microwave communications engineering from his work as a leading researcher at the Electrical Communications Laboratory of the Nippon Telegraph and Telephone Corporation from which he retired in 1984. At the invitation of the Italian government, he served as principal advisor of the joint Japan-Iran Electronic Communications Research Center from 1975 to 1977. He is currently a member of the Japan Industrial Designer's Association and has been a member of the Good Design Committee of the Ministry of International Trade and Industry.

Drawing upon this distinguished background and expertise, Dr. Ninomiya designs aviationally sound and sleek, high performance paper planes based upon principles of industrial design and mechanical functionality. Convincing evidence of his talent is his garnering of the grand prizes in the Duration Flight and Distance Flight categories of the 1st International Paper Plane contest (Pacific Basin Division) in San Francisco in 1967. He later served as a judge in the 2nd Great International Paper Plane Contest, held in Seattle, Washington in May 1985.

Dr. Ninomiya is widely recognized as a respected authority on paper planes. He has designed a wide variety of planes ranging from racer type models to profile models. He also holds a private plane operator's license and tries to get into the pilot's seat of his Cassina 182 whenever his busy schedule permits.





⑪

# WhiteWings®

McDonnell Douglas  
F-15 EAGLE

----- Fold with dashed line inside  
↑ Arrows: point forward



Band-resistant  
direction





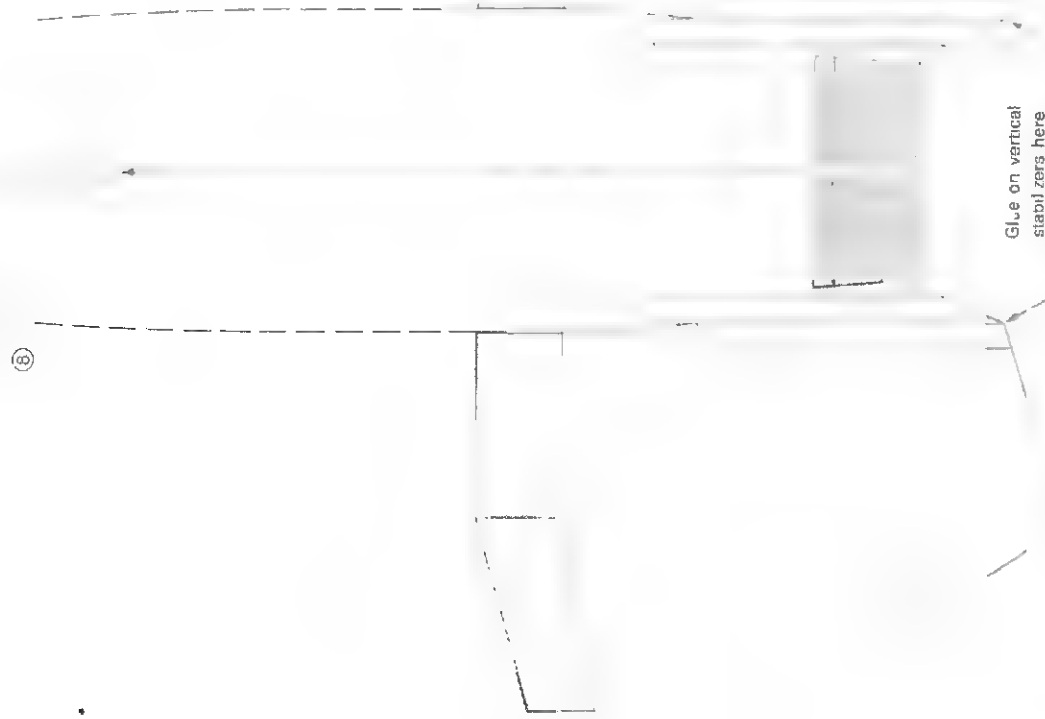
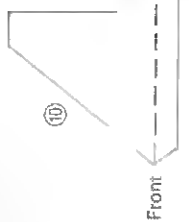
**WhiteWings®** McDonnell Douglas F-15 EAGLE



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WhiteWings





①



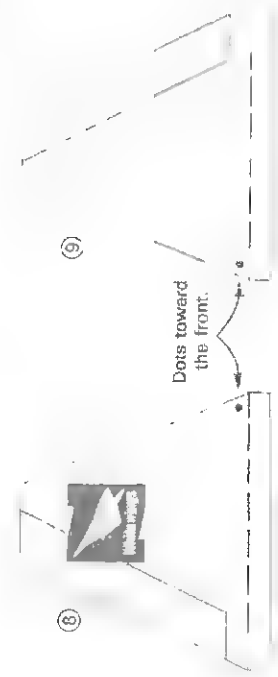
②



③



④



⑧

⑨

--- -- Fold with dashed line inside.  
↑ Arrows point forward



Bend-resistant  
direction

Angle gauge

64°

64

# WhiteWings®

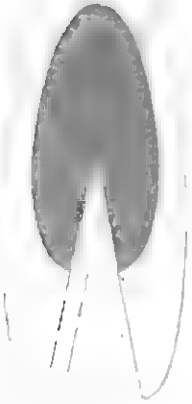
## Lockheed F-22





Arrow points forward.

10



7



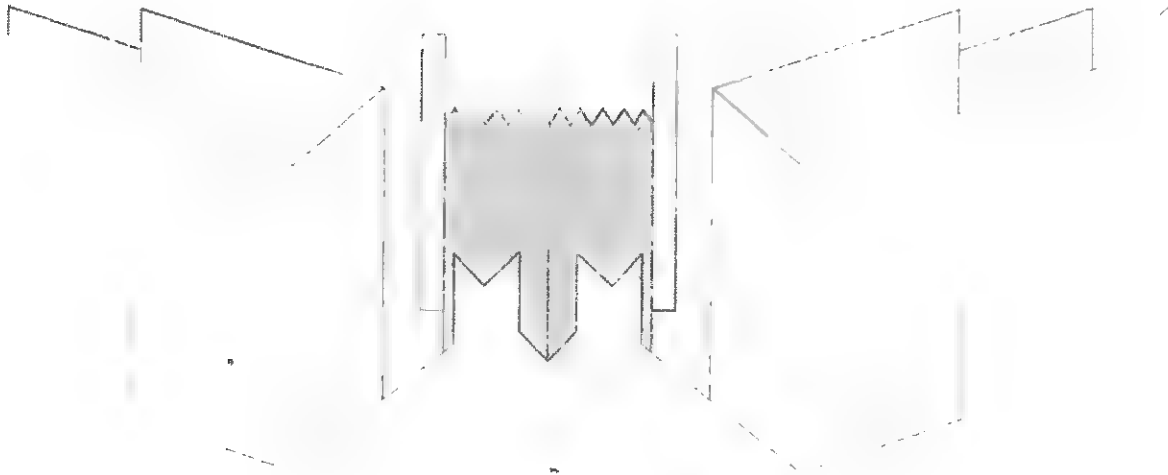
6



5



White wings





⑤



⑦

-7°

Dihedral angle gauge for  
horizontal stabilizer

G.D. F-16 Fighting Falcon

Dihedral angle gauge for  
main wing

10°

10°

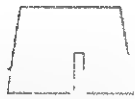
--- Fold with dashed line inside  
↑ Arrows point forward



**WhiteWings®** General Dynamics F-16  
FIGHTING FALCON

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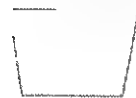
④

②



①

③



Arrow points forward.

12

When the main wings are inserted into the fuselage find the center part of the wing using these center guidelines

Center guidelines  
Arrow points forward.

13

Center guidelines  
Arrow points forward.

Center guidelines

11

WhiteWings

Center guidelines

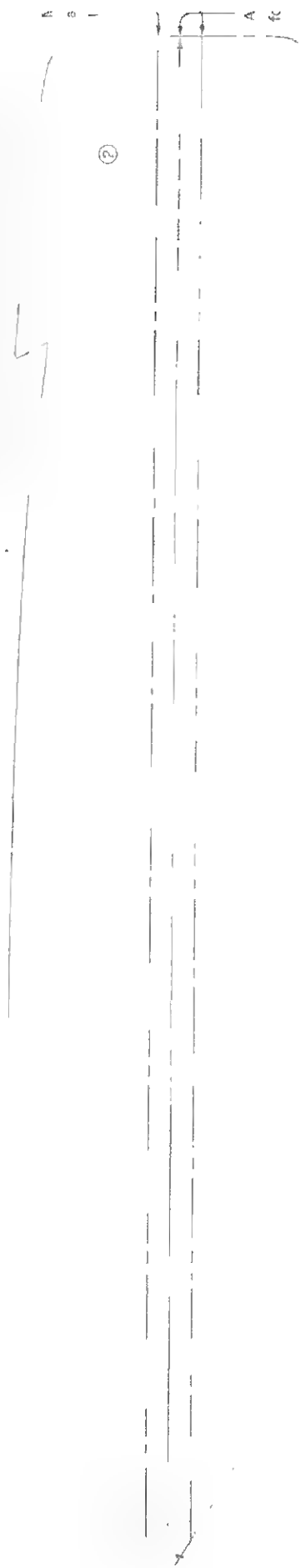
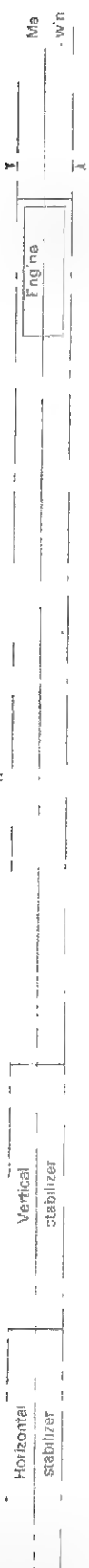
Arrow points forward

WhiteWings®

General Dynamics F-16 FIGHTING FALCON







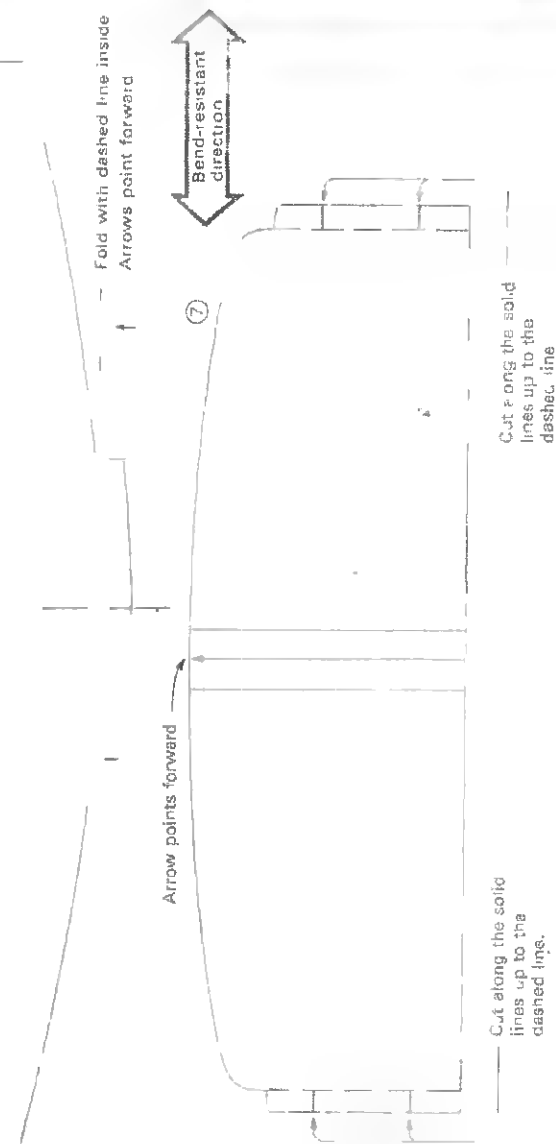
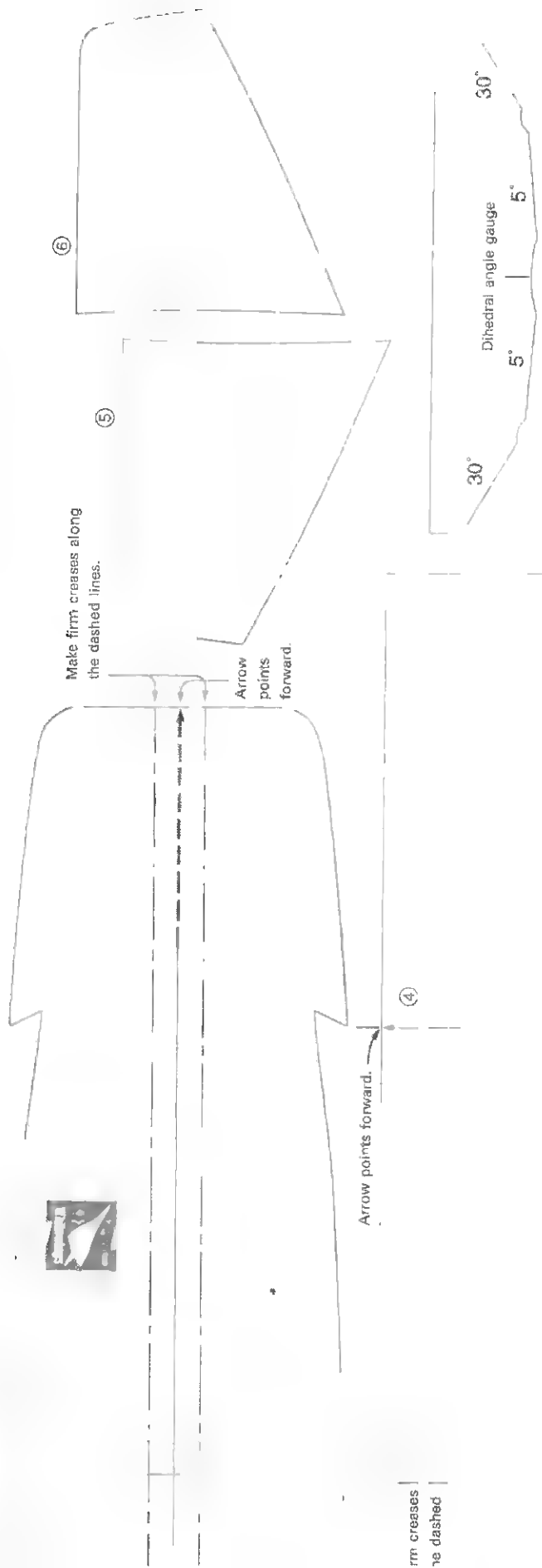
Arrow points forward. Outer lines to make the dihedral angle.

# WhiteWings



Fold with dashed line inside  
Arrows point forward





**WhiteWings®**  
Trilinear 704



①

Horizontal  
Stabilizer

Main  
wing

②

M  
al  
ir

③

Arrow points forward.

Outer lines to make the dihedral angle.

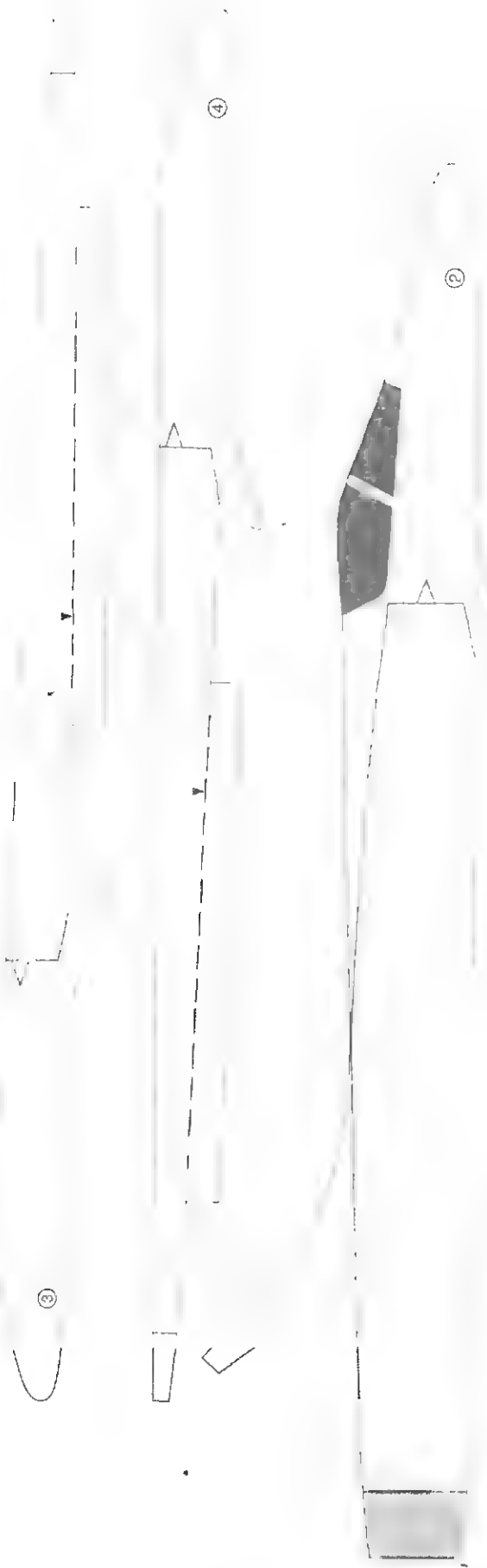
White wings

Arrow points  
forward.

④

Cut along the solid  
lines up to the  
dashed line.

Cut along the solid  
lines up to the  
dashed line.

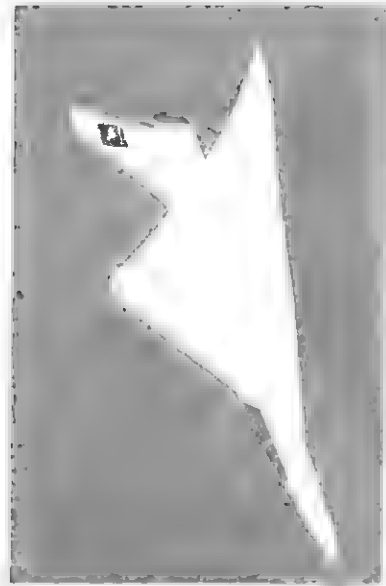


----- Fold with dashed line inside  
 ↑ Arrows point forward



**WhiteWings®** Dessault  
 MIRAGE 2000

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⑤



⑥

Fold with dotted  
line outward

⑦



Fold with dotted  
line outward.

Arrow points forward.



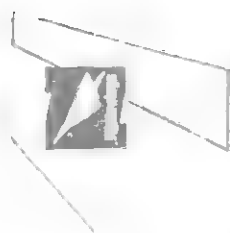
8°

Dihedral angle gauge

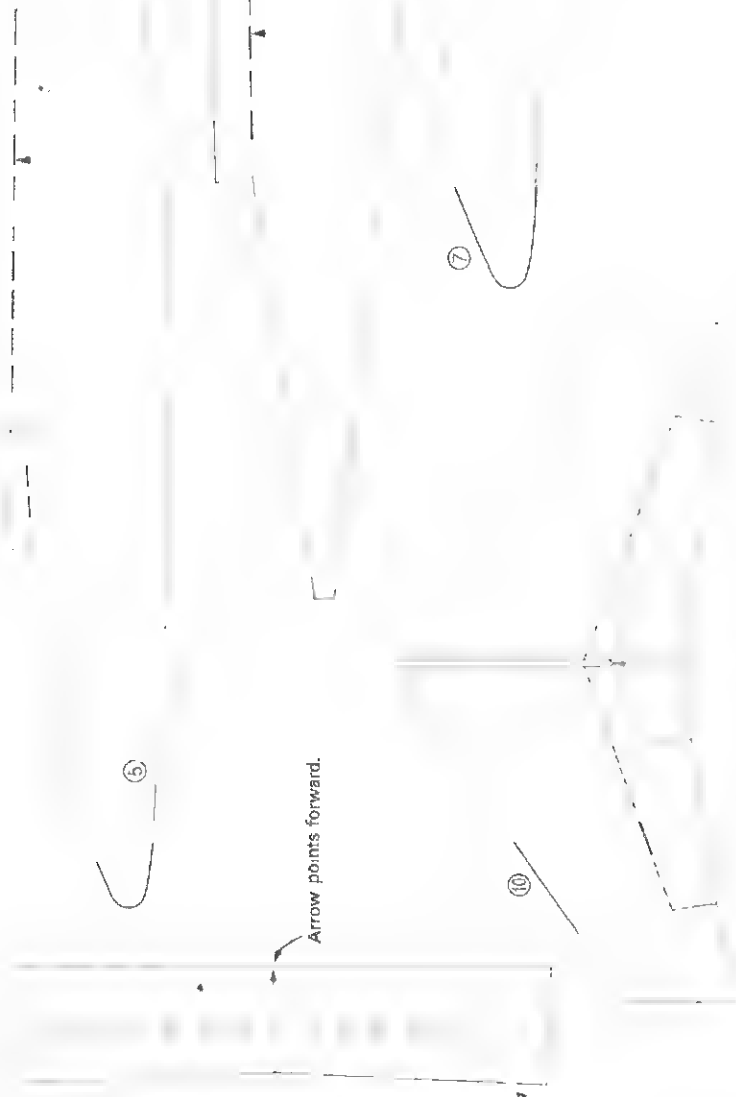
8°

Whitewings

⑧



12



11 Arrow points forward.

4

6

5" Dihedral angle gauge 5"

--- Fold with dashed line inside  
↑ Arrows point forward



**WhiteWings®** Hawker Siddeley  
HARRIER



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# WhiteWings

Arrow points forward.

⑧

②

Arrow points forward.

⑨

Cut along the solid line up to the dashed line.

③

①

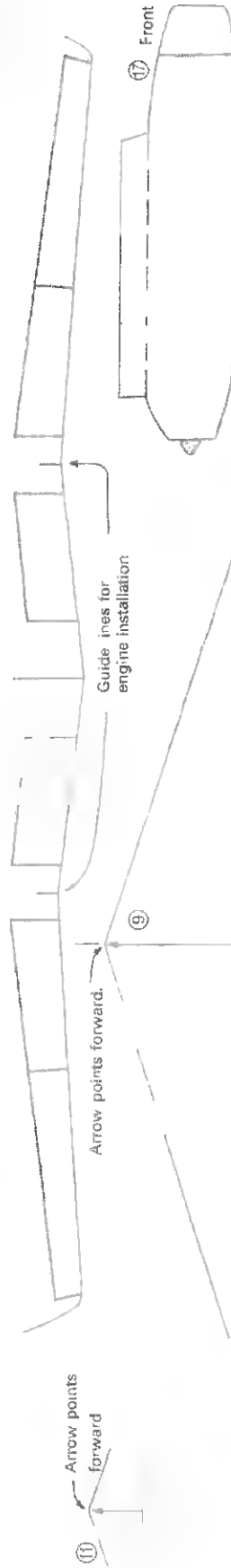






White Wings

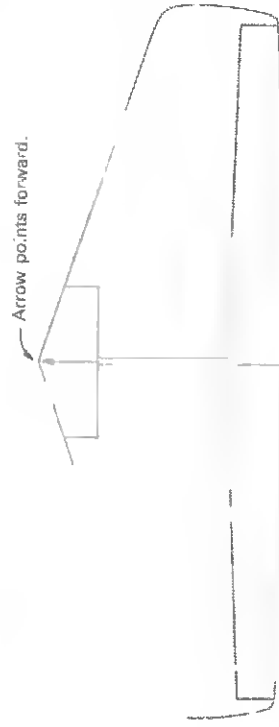
⑧

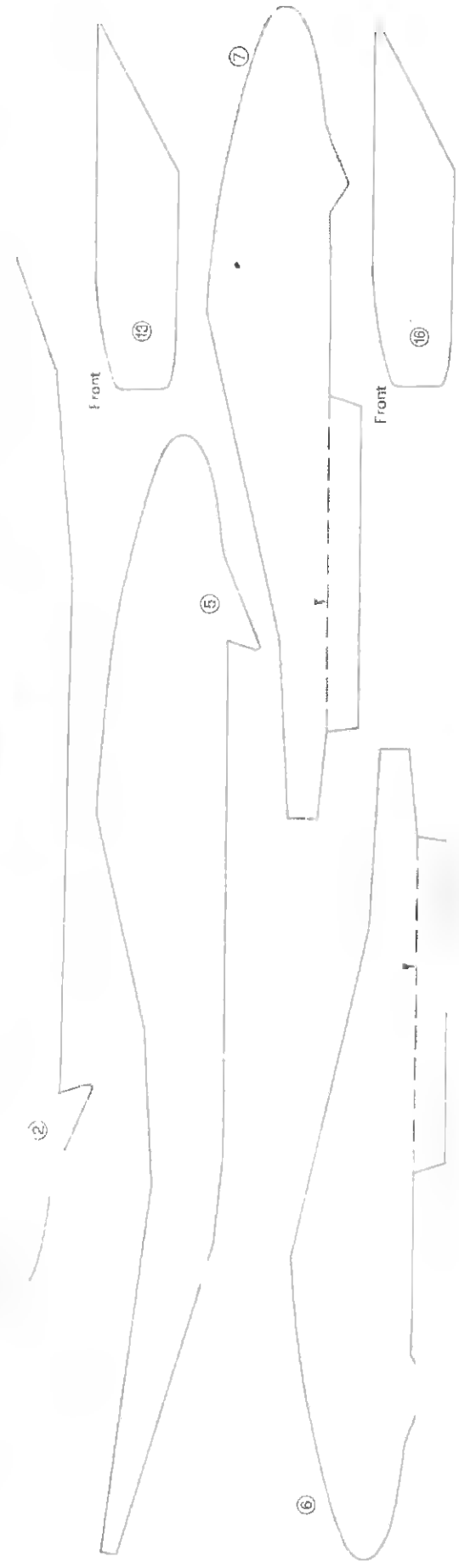
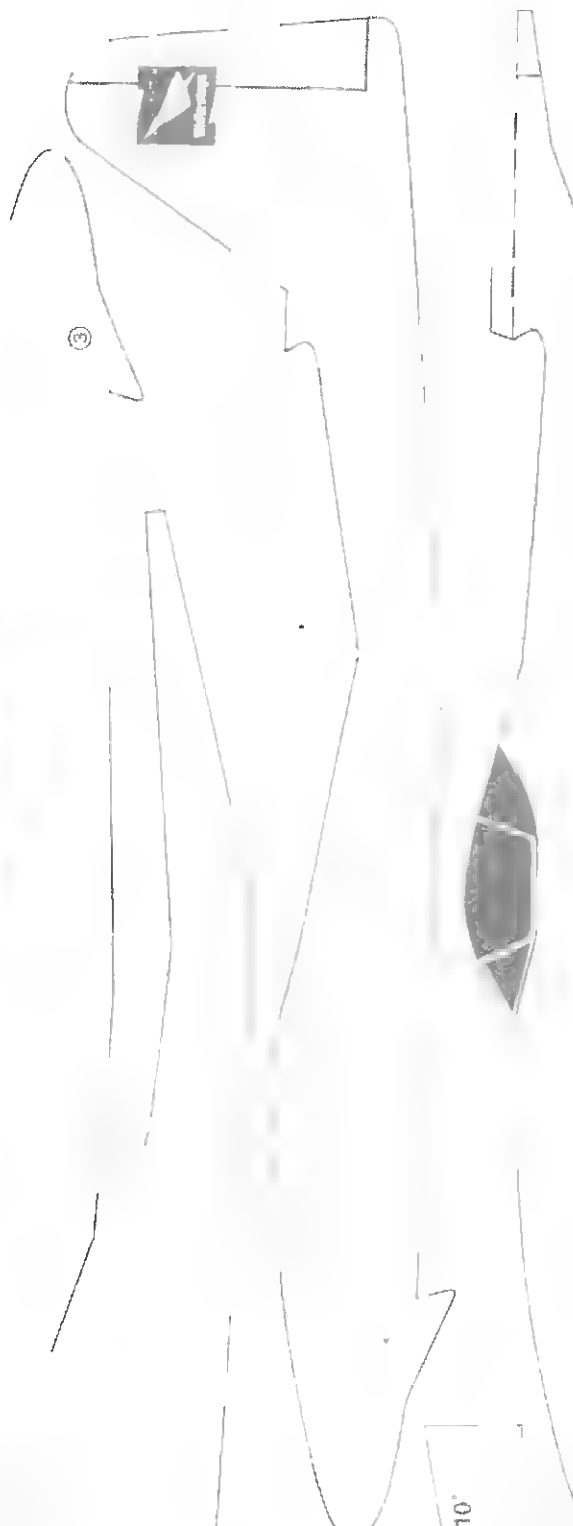


Fold with dashed line inside  
Arrows point forward

White Wings®

Messerschmitt  
Me-262

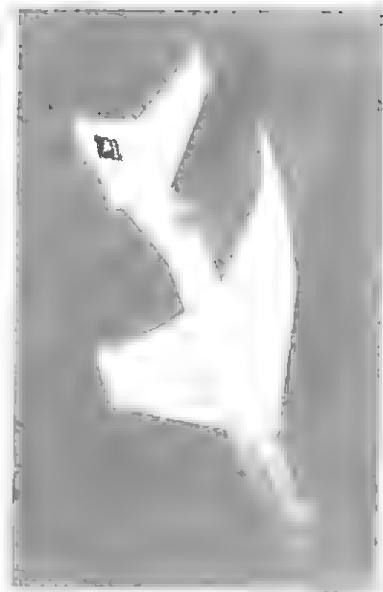
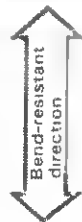




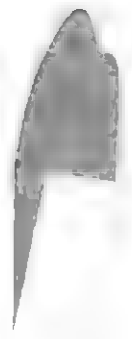
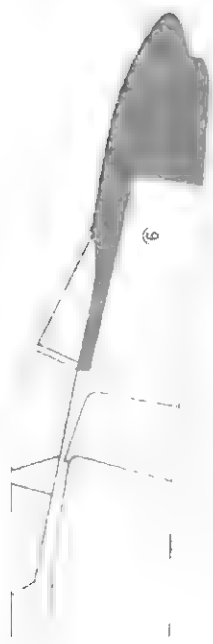
10° 10°  
Dihedral angle gauge



----- fold with dashed line inside  
 ↑ Arrows point forward



**WhiteWings®** McDonnell Douglas F-4  
 PHANTOM II



8

7



# WhiteWings®

North American F-86  
SABRE

WhiteWings

Arrow points forward.

⑧

Arrow points forward

10°

Dihedral angle gauge

7°

10°

--- Fold with dashed line inside  
↑ Arrows point forward



Arrow points forward.

⑪

⑩





⑥

④

②

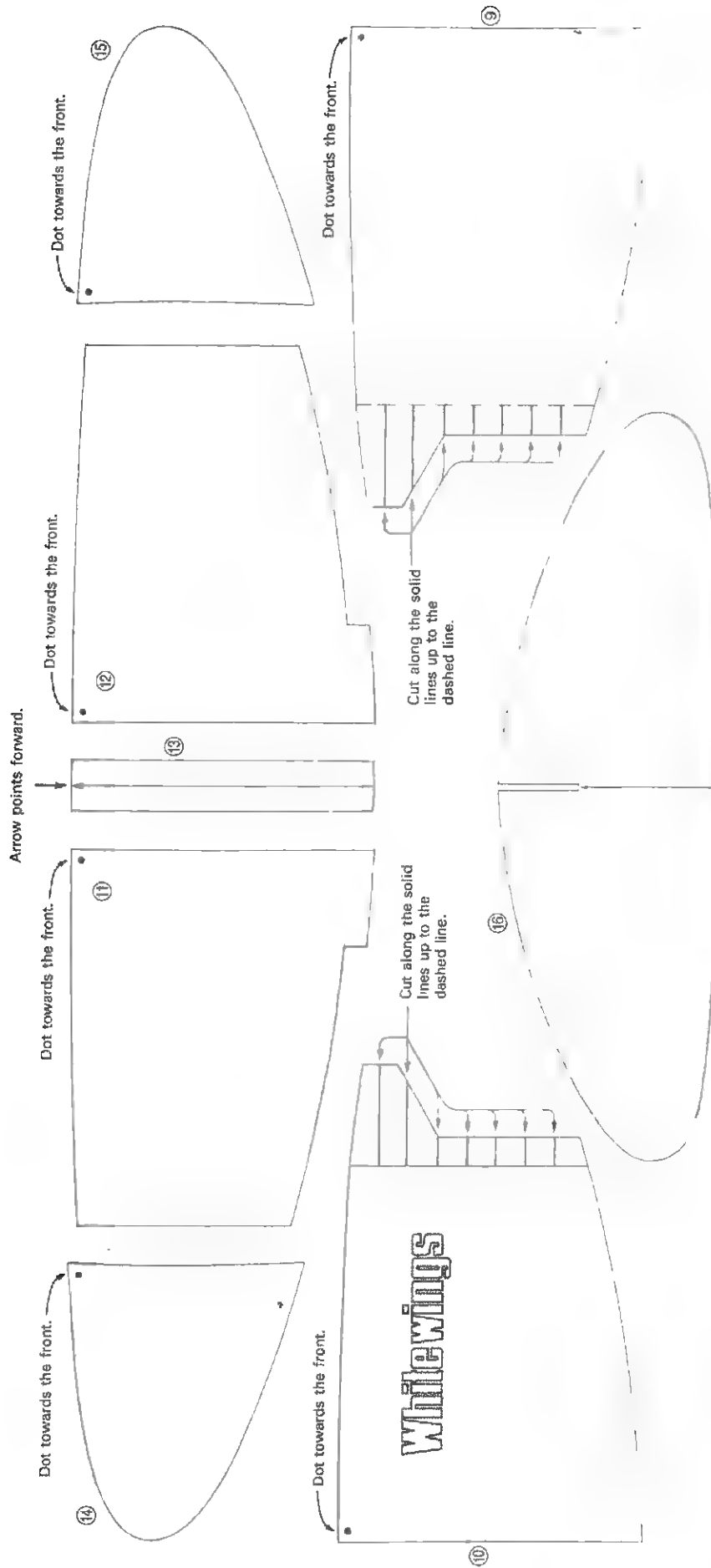


①

③

⑤

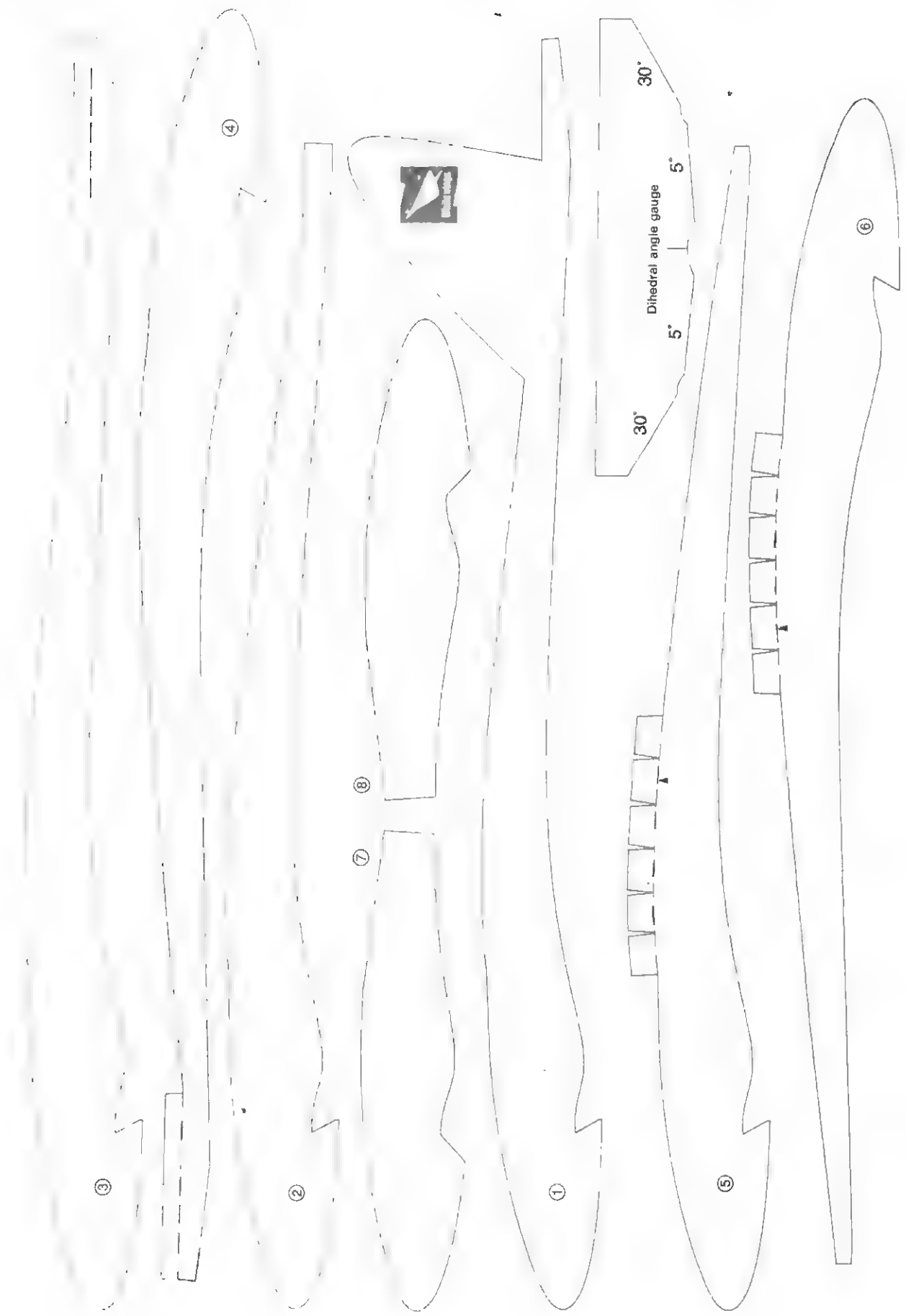
⑦



--- Fold with dashed line inside  
Arrows point forward



# WhiteWings® Racer 534 Heron







Arrow points forward.



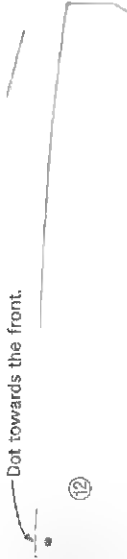
⑨



⑩

# WhiteWings

Dot towards the front.



⑫

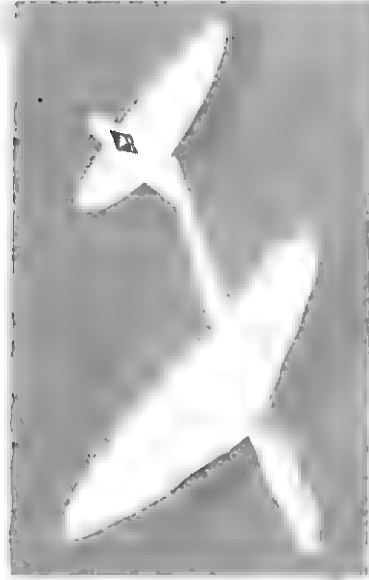
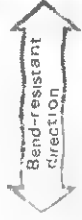
Dot towards the front



⑭

# WhiteWings® Racer 533 Sparrowhawk

--- Fold with dashed line inside  
| Arrows point forward



③

②

①

⑤

⑦

⑧

④



15° Dihedral angle gauge 15°

⑥

③



②

⑦

⑥

①



⑤



Dihedral angle gauge

15°

15°



⑥



④



Arrow points forward.

⑧

WhiteWings

Arrow points forward

⑨

15° 15°  
Dihedral angle gauge

⑩

--- Fold with dashed line inside  
| Arrows point forward



WhiteWings<sup>®</sup> Racer 532  
Dragonfly

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Arrow points forward.



③



⑥



①



④



⑤



②



Arrow points forward.

Fold with dotted line outward.

Arrow points forward.

Fold with dotted line outward.

Fold with dotted line outward.

Arrow points forward

Fold with dotted line outward

WhiteWings

⑧

13°

13°

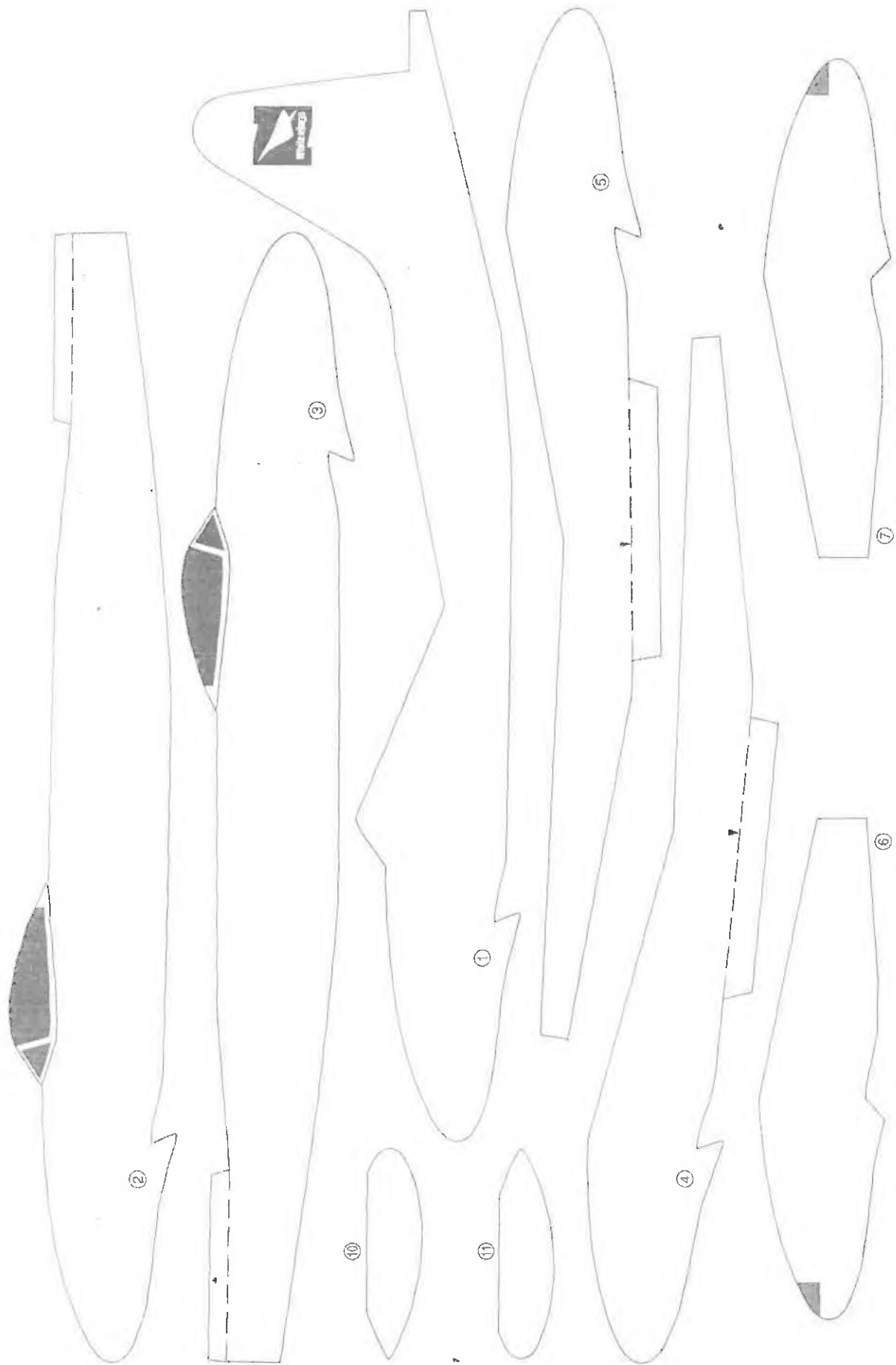
Dihedral angle gauge

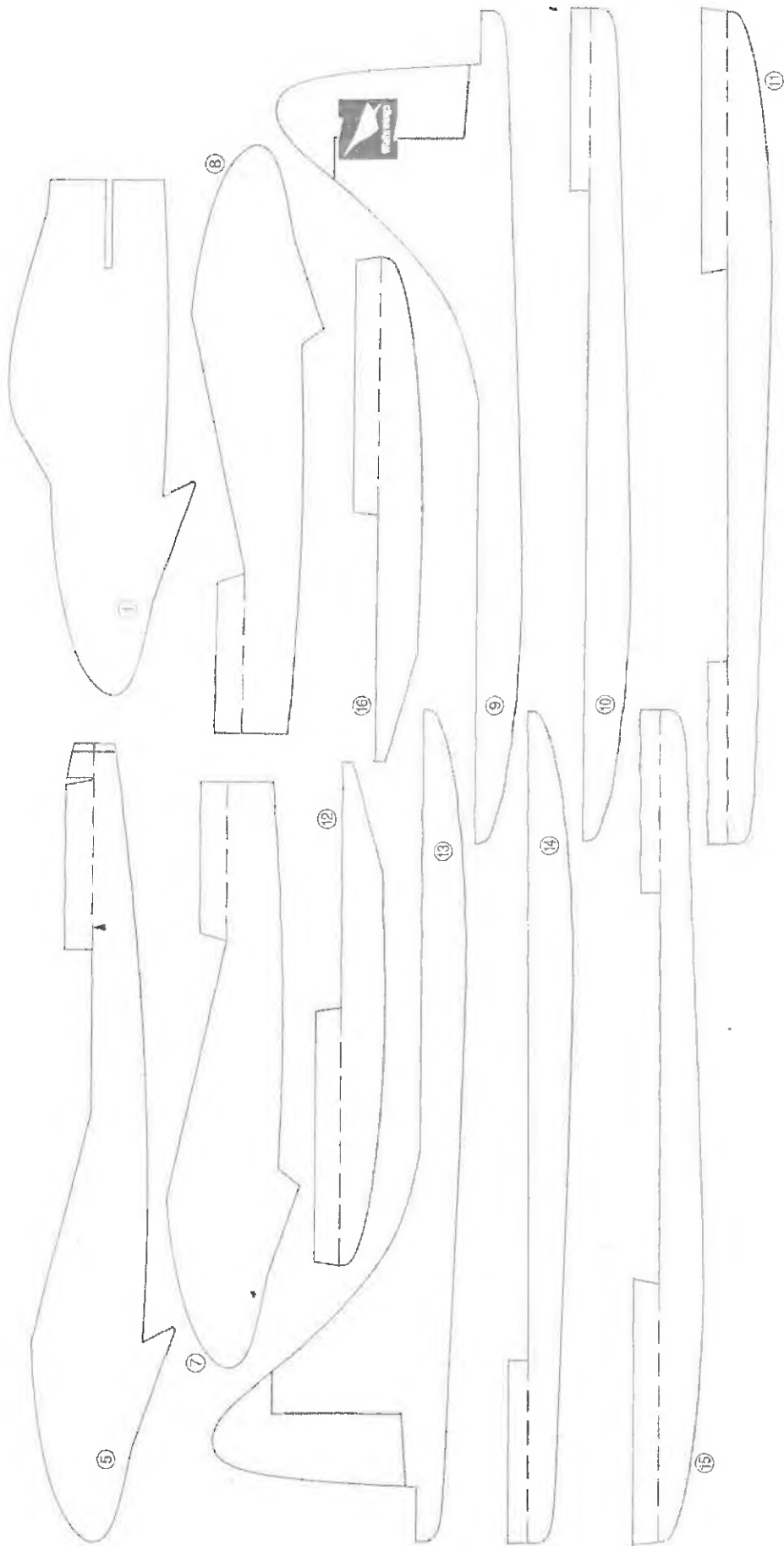
Fold with dashed line inside  
Arrows point forward.



WhiteWings® Lockheed P-80  
SHOOTING STAR







--- Fold with dashed line inside  
↑ Arrows point forward.



**White Wings®** De Havilland  
VAMPIRE



